# Using Zoom Lenses
## PL / EF / Micro Four Thirds

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Slowly, cinema lenses for the Micro Four Thirds mount are starting to come onto the market. That's good news, of course, for people who want to put the AG-AF100 series to work in cinema-style video recording, but the fact remains that the selection in zoom lenses is limited in comparison to fixed focal lenses. In this article, I describe a series of tests of the AG-AF100 series with zoom lenses built for a variety of mounts.

We'll start with some zoom lenses for the PL mount. These lenses are cine-style zoom lenses, so they tend to be large and heavy. When using them with the AG-AF100 series, a lens support is an absolute requirement.

With most cine-style zoom lenses, a 19 mm diameter rod is combined with the Arri slide base and bridge plate. However, given the small size of the AG-AF100 series, the heights do not align properly if the AG-AF100 series is mounted directly onto the bridge plate. Fortunately, a number of companies now offer support systems for the AG-AF100 series so these can be added to the configuration, or one of these support systems can be used alone. Some equipment rental companies even offer original support systems that they have modified for even more convenient use, and I recommend that you check these out.

For this article, I borrowed a number of support systems specially built by several companies for the AG-AF100 series and used them to affix an Arri 19 mm diameter rod system. With this configuration as my base, I attached a number of lenses to the AG-AF100 series.

### Lightweight Zoom LWZ.2

True to its name, the Carl Zeiss Lightweight Zoom LWZ.2 is indeed remarkably light for a zoom lens. Carl Zeiss built this zoom lens with Steadicam and handheld video shooting in mind (Photo 1).

Photo 1: As the name suggests, the LWZ.2 is remarkably light for a zoom lens.

Photo 2: Shot with Lightweight Zoom LWZ.2 (40 mm, T2.6). Naturally, the video was captured with no F-drop, and image quality was consistent throughout the entire zoom range.

Light though it may be, when the load it places on the mount is considered, a lens support is necessary even for the LWZ.2. The LWZ.2 lineup includes products for the Micro Four Thirds mount, but as I was unable to get my hands on one at the time of writing, I selected one with the PL mount specification. For this shoot, I used an original support system from the equipment-rental house, as well as a PL mount holder from Anami Kaigai K.K. that unifies the mount adapter and support system. Both systems are available with a 15 mm diameter rod, but for the zoom lens I used 19 mm diameter rod. I mounted the lens with PL mount to Micro Four Thirds mount conversion adapter with no problems.

This was my first time to try the LWZ.2. My impression of the lens quality was that it is closer to the Compact Prime CP.2 than to the Ultra Prime. I was pleased and reassured to find that the lens delivers the crisp, sharp image tone I've come to know and love from Carl Zeiss (Photos 2–4).

Photo 3: Shot with Lightweight Zoom LWZ.2 (15.5 mm, T2.6). Fine details down to the individual leaves are reproduced, and the image is overall clear and sharp, with beautiful contrast.

Photo 4: Shot with Lightweight Zoom LWZ.2 (15.5 mm, T4.0). Despite the low-contrast conditions with the sun hidden behind a cloud, excellent contrast is expressed.

Photo 5: The LWZ.2's light weight and compact footprint provides a nice balance with the AG-AF100 series, and it looks nicely balanced as well (mounted on Anami Kaigai K. K. PL Mount Holder).

When combined with the AG-AF100 series, decreasing the detail level might be the best way to express the sharpness of the lens itself. I also felt that the action of the zoom ring was a little loose, making manual zooming rather difficult.

What I liked about the LWZ.2 was the 15.5–45 mm zoom range (fully open aperture value is T2.6). This is a little hard to explain, but in my experience when a lens with this kind of range is mounted on a crane, it can be a easy to use. The same may hold true for handheld shooting. Though some peripheral dimming was visible at the wide end, overall this lens presents no problems.

The LWZ.2 is a harmonious choice for the AG-AF100 series, which is also lightweight and compact. Because of its light weight and compact footprint, the LWZ.2 provides nicely balanced weight with the AG-AF100 series, and the configuration has a nicely balanced look as well (Photo 5).

### Variable Prime VP-1

Also from Carl Zeiss, the Variable Prime VP-1 has a wider bore than the LWZ.2, and the aperture is brighter at the fully open end (16-30 mm T2.2). Less welcome is the weight, which is much heavier than the LWZ.2 (Photo 6). Nonetheless, the image quality is crisp and performance is superb in terms of distortion and peripheral light. The VP-1 supports consistent image quality throughout the entire zoom range, making it a zoom lens you can use with confidence (Photo 7).

Photo 6: The Variable Prime VP-1 has a wider bore than the LWZ.2 and a brighter aperture at the fully open end, but it is quite heavy (mounted on PL-AF100 PL Mount Adapter from Triad).

In my tests, I found the back focus to be a bit out of alignment, which is unfortunate as the AG-AF100 series lacks a back-focus adjustment mechanism. Then I used the Triad PL-AF100 PL mount adapter, which incorporates such a mechanism. The structure is simple—just rotate the mount adapter to make fine distance adjustments with the sensor surface. A lock screw is also implemented, so once you've finished your adjustments, lock the lock screw and the mechanism will be unlikely to slip.

Photo 7: Shot with Variable Prime VP-1 (30 mm, T5.6). The directly sunlight hitting caused a high contrast image. Expression in the dark parts is superb.

With the wide variety of peripheral accessories available for the AG-AF100 series today, this camera recorder could probably be fitted and used with virtually any lens. In fact, I would say that effective use of these support systems is a key to getting the most out of the AG-AF100 series.

When using a mount adapter, you might experience some looseness between the adapter and the AG-AF100 series. In these cases, instead of using the adapter on its own, you can integrate it with a base plate, support system or the like. Choosing a system that fixes all components securely in place is an essential point to remember.

## Canon EF Zoom TF-Version

Next up were zoom lenses for the Canon EF mount. For this report I picked out three lenses from the Canon EF Zoom TF-Version series, a series of Canon EF zoom lenses modified by Technical Farm for cine-style use: the 16–35 mm, 24–70 mm and 70–200 mm. Each lens was modified from the EF 16-35 mm F2.8L II USM, EF 24-70 mm F2.8L USM and EF 70-200 mm F2.8L IS II USM.

Photo 8: The Canon EF Zoom TF-Version from Technical Farm handles just like a cine-style lens, which should make a camera assistant easierto adjust focus.

Photo 9: Shot with Canon EF Zoom TF-Version 70-200 mm (200 mm, F2.8). No F-drop occurs even not the fully open aperture position, so F2.8 can be used throughout the zoom range.

Photo 10: Shot with Canon EF Zoom TF-Version 70-200 mm (70 mm, F2.8). A bit of flaring can be seen due to backlighting. The bokeh looks natural and the low-contrast moss is finely detailed.

Photo 11: Shot with Canon EF Zoom TF-Version 24-70 mm (50 mm, F2.8). The moss is finely detailed. The bokeh in the background brings out a pleasingly natural look.

While the EF lenses themselves have no rings for the iris, as they are electronically controlled, the TF-Version modifications are attched with iris rings. So the lenses can be operated manually. Also, a stopper mechanism is attached at closest and infinity points on the focus ring, to prevent rotating infinitely. Overall, the TF-Version handles like a cinema-style lens, which should make a camera assistant easier to adjust focus. Each ring is mounted with a gear to permit the use of a follow focus and other cine accessories (Photos 8–14).

I attached the lenses to the AG-AF100 series using the Kipon EOS-m4/3A EF-to-Micro Four Thirds mount adapter. You can use a 19 mm diameter rod system for support, but a 15 mm diameter rod system can be fitted for dedicated AG-AF100 series support systems only. This latter arrangement is the more compact solution.

Photo 12: Shot with Canon EF Zoom TF-Version 70-200mm (200 mm, F2.8). Even at the telephoto end, the sharpness of the image is maintained.

As with all cinema-style lenses, you don't know for sure how they'll handle or how the results will look until you actually start using them. For example, the pitch of the focus ring is tighter than cine-style lense, requiring fairly delicate operation. Similarly, rotating the iris ring just a few millimeters moves it 1/3 step. Of course, this awkwardness is no problem once you get accustomed to it.

A bit more bothersome is the F-drops that occur in iris settings other than fully open in the 16–35 mm and 24–70 mm lenses. Also, the 24–70 mm lens is elastic when zooming, so be carful if you are using a matte box. Another issue is that the 70–200 mm, which is longer than the other two lenses, is not equipped with a rod-support mechanism for the lens itself. This means that when the gear is operated, it presses against the lens and causes moving the image. This problem is presumably related to the rigidity of the body and mount conversion;  To use a lens support and other equipments may solve it.

Photo 13, 14: When used with the AG-AF100 series, these lenses offer resolution equal even to cine lenses. I experienced no peripheral dimming  or troublesome distortion (Top: 16-35 mm; bottom: 70-200 mm) .

Photo 15: Shot with Lumix G Vario HD 14-140 mm/F4.0-5.8 Asph./Mega OIS. Despite difficult conditions under direct sunlighting, a well-balanced shot was achieved in a bright environment.

## Lumix G Vario HD 14-140 mm/ F4.0-5.8 Asph./Mega OIS

The Lumix G Vario HD 14-140 mm/F4.0-5.8 Asph./ Mega OIS is a genuine Panasonic lens for the Micro Four Thirds mount.

Before you use this lens, I recommend that you remove all of the parts you don't expect to use, to make it as compact and lightweight as possible. The Lumix G Vario HD 14-140 mm may be an inexpensive lens, but it is not a poor one by any means. In some ways it is difficult to use for moviemaking—for example, the F values shift from 4.0 to 5.6 along the zoom range—but the imaging is crisp, and the zoom range of 14–140 mm is simply incredible for this small size (Photos 15, 16).

I have in fact used the AG-AF100 series in some of my recent moviemaking. In some live conserts scenes, I wanted to slip into the audience and record from there with a zoom lens. I relied exclusively on the AG-AF100 series and the Lumix G Vario HD 14-140 mm. There are many applications requiring the zoom lenses and a wide variety of systems to achieve the purpose. It's important to select the right lens and system for each application. You won't go far wrong by adding this lens to your toolkit.

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When a heavy zoom lens is attached to the AG-AF100 series, problems can occur as the overall weight balance shifts dramatically to the front. Using a slide base will more or less redress this imbalance. Another possibility is to include a battery adapter in your AG-AF100 series support systems, and mount a lithium battery on the V mount at the back of the camera. With this configuration, the front and rear of the camera are nicely balanced, and as a bonus you have an added power supply, not only for the AG-AF100 series but for peripherals as well, such as an external monitor and lens accessories.

With the right support accessories, the AG-AF100 series can be used with virtually any zoom lens, coordinating with a full range of shooting styles.

Photo 16: The Lumix G Vario HD 14-140 mm/F4.0-5.8 Asph./ Mega OIS. The lens's compact size belies its tremendous 14-140mm zoom range.